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# Do Cleaning Powders Scratch Porcelain Enamel?

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the electric unit is removable, and in some stoves may be used in the oven for broiling.

Oven construction that permits the change from one fuel to another without removal of parts is convenient. If a stove is made with removable parts, however, it should be made to include storage space for them right in the stove.

## Do Cleaning Powders Scratch Porcelain Enamel?

(Based on a study by Evelyn Sparks,  
Household Equipment Department)

Most household scouring powders and pastes scratch or dull porcelain enamel surfaces, according to tests made in the household equipment department at Iowa State College. Dirt and stains adhere readily to enamels that have been roughened by abrasives, additional scouring is necessary, and a vicious cycle of staining and scrubbing begins.

In the household equipment research laboratories, tests were made to determine the abrasive action of fourteen popular brands of cleaners on two types of porcelain enameled cast iron and three types of porcelain enameled sheet iron. Enough specimens were provided so that

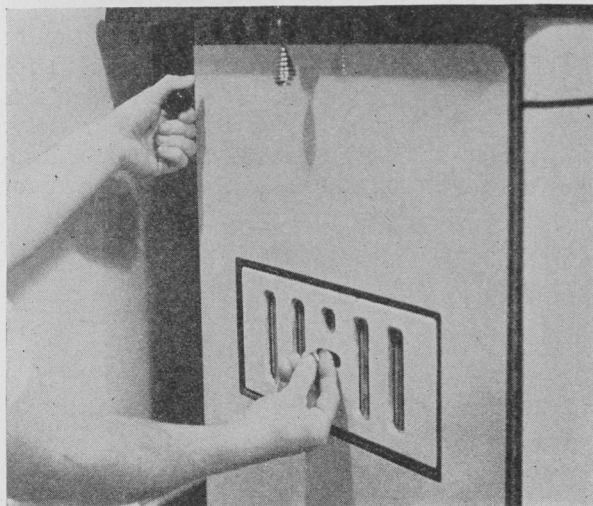
each cleaner was tested on a new, previously untreated enamel surface.

The scrubbing machine used to make the test consisted of a food mixer, the beaters of which were replaced by a padded 2¼-inch copper scrubbing disk. The enamel samples were mounted on a metal holder, and held against the pad with a constant force of five pounds by means of a pulley device. The planetary action of the beater shaft gave a motion to the scrubbing pad similar to the irregular circular motion employed by most women in scouring. Low speed was used.

At the end of 15 minutes scrubbing, nearly all of the cleaners had produced a fine-grain "etching" over the entire surface of the cast-iron enamels. As the scrubbing progressed, the central dulling was scoured off, leaving a smooth shiny surface. With the moderately active abrasives, pitting appeared next in this central area, and scratching last, if at all.

The harsher abrasives produced scratches, sometimes even during the first half hour of scrubbing, before the initial etching was greatly altered. The cleaners which caused pit-

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Because the expensive period in baking is the time while the oven is being preheated, this combination range oven is being started (upper left) with coal, cobs or wood, because they are cheaper than gas or electricity.

In top center, the homemaker now closes the draft to throw the heat into the flue surrounding the oven.

To use the second heat, she takes out the section of the oven bottom which covers the gas burner (above).

In photograph to right, the homemaker lifts the baffle plate or distributor to show the position of the gas flame.

# Cut Red Clover in Full Bloom For Best Hay and Seed Yield

The best time to cut both first and second crops of medium red clover for hay is when it is near the full-bloom stage. In cutting at this stage, the Iowa Station found that a good sized aftermath of about 1 ton per acre, was produced which could be used for pasture.

Mammoth red clover gave the best yields by cutting the first crop for hay in the early bloom stage and a second crop in the quarter to full bloom stage. Mammoth seldom makes two good crops of hay, but in 1940, plots at the Iowa Station produced 4.65 tons to the acre as a total for the year.

The highest yield of seed in 1940 was produced when the first crop was allowed to go to seed without any cutting or clipping treatment. Plots producing seed in the first crop were harvested July 18 and produced a second crop of seed which was harvested Oct. 17. The total yield of seed was 216.3 pounds to the acre.

It is not often that one gets two crops of seed, but in 1940 there were heavy rains in late July and all through August which are credited with the two crops of that year.

When the usual harvesting method was followed of cutting the first crop in the early bloom stage and the second crop for seed, the yield of seed was 70.6 pounds to the acre in contrast to the 216 pounds obtained by cutting both crops for seed.

The first cutting of medium red clover in these experiments was made at six different stages of maturity, beginning with the bud stage on May 30 and ending July 18 with the mature stage. Second crops were harvested when 25 percent in bloom, full bloom and when seed was mature.

The procedure with mammoth red clover was the same except that the bud stage cutting came

June 20 and the mature seed stage Aug. 8.

The plots of mammoth red clover allowed to set seed normally in the first crop produced the unusually high seed yield of 380 pounds to the acre. The yield was obtained on small plots where plenty of bees were at work.

## Do Cleaning Powders Scratch - - -

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ting and scratching first were almost invariably the most damaging in the end.

The sheet iron enamels reacted quite differently from the cast iron ones. Often the first 15 minutes of scrubbing produced a high polish. Later the first fine pebbling, characteristic of this type of enamel, was worn off to a smooth attractive surface. Soon, however, the harsher cleaners produced fine, very undesirable, concentrated pitting which increased as the scrubbing progressed. The harshest cleaners scratched the sheet iron enamels within a quarter or half hour. Again, early scratching preceded the most severe wear.

As a result of this experiment the following suggestions on the care of porcelain enamels are given to the homemaker:

1. The use of harsh abrasive cleaners should be avoided.

2. Even more moderately abrasive cleaners will produce dulling or pitting, or both, over a period of months and years if used frequently.

3. The prolonged use of baking soda was found harmless to enamel; it is therefore highly recommended as an aid to soap and water in cleaning of porcelain enamel surfaces.

4. The abrasive effect of commercial cleaning powders and pastes cannot always be judged by their degree of solubility or by their price.

## Soybean Planting Rate

When conditions are favorable for germination and you have seed with a high germination percentage, 1 bushel of soybean seed to the acre is the minimum rate that you should plant for 32-inch rows in order to get a top yield.

Tests at the Iowa Station in 1939 showed that any amount of seed from 1 to 2.2 bushels to the acre gave approximately the same yield. To test this further, the next year, the rate was dropped to 0.6 bushel to the acre. With this rate of seeding there was a highly significant drop in yield.

It didn't seem to make much difference whether a variety was early or late-maturing in the effect which late planting had on yield in 1940, but in 1939, the early varieties considerably outyielded the late varieties when they were planted late.

Normally the best time found to plant soybeans is immediately after corn planting is finished. One usually can expect a considerably reduced yield if planting is delayed as late as June 15.

Potatoes need to be sprayed or dusted throughout the growing season. Although spraying with a bordeaux mixture is considered preferable to dusting, the home garden patch of potatoes may be dusted. The standard potato dust formula contains 1 pound finely ground monohydrated copper sulfate; 4 pounds hydrated lime;  $\frac{1}{4}$  to  $\frac{1}{2}$  pound calcium arsenate. Still another formula is: 8 pounds calcium arsenate and 100 pounds 325-mesh dusting sulfur, applied at the rate of 40 pounds to the acre.

The Danish Landrace breed of swine at the Iowa Station so far has shown more rapid gain, has longer bodies, produces larger litters, has plumper hams and coarser more open shoulders than Poland Chinas. The Landrace pigs are also weaker in their feet.